

What is claimed is:

1. A modulator and demodulator (MODEM) including;

(a) a memory means for storing an object program of process procedure,

(b) a switching means for switching a mode of process procedure prescribed in response to the execution of said object program, and

(c) a control means for executing a process corresponding to the mode just in operation.

2. The MODEM of Claim 1 wherein said memory means has areas for storing data from a data terminal equipment (DTE), said areas are corresponding to each mode, and when said switching means switches a mode, said control means stores the data corresponding to the next mode in a deferent area from the area which stores the data corresponding to the previous mode.

3. The MODEM of Claim 1 wherein said memory means has a first area for storing a command from a data terminal equipment (DTE) and a second area for storing a data from the DTE in pairs corresponding to each mode, said control means transmits the data stored in said second area of said memory means to a line while inputting a command for storing from the DTE to the first area corresponding to said second area, and when completing the transmitting of the data stored in said second area, said control means judges based on the command stored in said first area whether the transmitting of the data from said second area is stopped or not.

4. The MODEM of Claim 1 wherein said memory means has a plurality of banks, and also has data storing areas for each mode, which data storing areas store the data from a data terminal equipment (DTE) in the unit of frame into said banks.

5. The MODEM of Claim 1 wherein said memory means has a plurality of banks, command areas and status areas both corresponding to each bank, which command area stores information about an operation instruction, and which status area stores information showing buffer status.

6. The MODEM of Claim 5 wherein the control means provides an error check to the received data from the line, and when an error is detected, only the result of "data-error" is written into the status area, yet error data is canceled and not stored in the proper bank of the data storing area.

7. The MODEM of Claim 5 wherein the information showing buffer status includes either a Data Full/Empty display or the information identifying occurrences of abort and error.

8. A modulator and demodulator (MODEM) including a memory means storing an object program about process procedure, and a timer means monitoring transit time between an ended process procedure and a next process procedure, said MODEM starting a process of a specified mode based on a mode-setting-instruction of said process procedure as well as monitoring transit time by said timer means, and executing a next specified mode when time is out in said timer means.

9. The MODEM of Claim 1 further including an analysis means for analyzing a received signal, and a mode switching means for switching a mode when said analysis means detects a specified signal.

10. The MODEM of Claim 9 wherein said analysis means deframes a received data-frame and analyzes the data-frame, and when the analysis tells that the data-frame is an RCP (return to control for partial page) frame, a mode is switched from a main-channel-receiving-mode to a control-channel-mode.

11. The MODEM of Claim 9 wherein when said analysis means tells that a control-channel-ending-signal comprising a special pattern never produced during data transmitting is detected, the mode is switched from the control-channel-mode to main-channel-receiving-mode.

12. The MODEM of Claim 1 further including

(a) a modulating means for outputting a modulated signal to the line,

(b) a demodulating means for outputting a demodulated signal from a received signal fed from the line,

(c) an error counting means for counting errors of said demodulated signal,

(d) a specifying means for specifying an acceptable maximum error volume, and

(e) a control means which has said modulating means transmit a retraining signal to the line when an error volume

counted by said error counting means exceeds said acceptable maximum error volume.

13. The MODEM of Claim 12 wherein said acceptable maximum error volume is specified by the DTE.

14. The MODEM of Claim 1 further including

(a) a timer means for starting the transmitting of a specified signal as well as counting a specified time,

(b) a reset means for resetting said timer means when a response signal to said specified signal is detected from the line during the specified time, and

(c) a notifying means for notifying an abnormality to the DTE when said response signal is not detected from the line during the specified time.

15. A modulator and demodulator (MODEM) comprising:

(a) an interface sending and receiving data to/from a data terminal equipment (DTE),

(b) an encoder transducing transmitted data into a two-dimensional signal,

(c) a modulator providing a quadrature-amplitude-modulation to the two-dimensional-signal,

(d) a hybrid circuit connected to a line for separating signals of transmitting system from signals of receiving system,

(e) a demodulator providing a quadrature-amplitude-demodulation to a received signal for being changed into a two-dimensional signal,

(f) a judging part for judging said two-dimensional-signal based on V.34 Standard of ITU-T Recommendation. (ITU: international telecommunication union)

(g) a decoder transducing the judged two-dimensional-signal into a received data,

(h) an error counter which counts a two-dimensional-error-signal by using outputs of said demodulator and said judging part,

(i) a calculator for calculating a power of said two-dimensional-error-signal, and outputting a signal representing quality of the received data tapped off from said calculator, and

(j) a controller inputting the following three signals:

1. the signal representing quality of the received data tapped off from said calculator,

2. a reference signal for judging a retraining control which is set by the DTE,

3. an identifying signal tapped off from said demodulator for identifying a received signal,

said controller outputting a control signal controlling said modulator.

16. A data communication equipment comprising:

(a) a data terminal equipment (DTE),

(b) a modulator and demodulator (MODEM) linked up to a communication line, said MODEM comprising:

(1) a memory means storing an object program about a process procedure,

(2) a switching means for switching a mode in a unit if prescribed process-procedure in response to the execution of said object program, and

(3) a control means for executing a process procedure corresponding to the mode just in operation.

17. The data communication equipment of Claim 16 wherein said memory means has areas storing data from the DTE for each mode, and when a switching means switches a mode, the control means stores the data corresponding to the next data into a different area from the area where the data corresponding to the previous mode is stored.

18. The data communication equipment of Claim 16 wherein said memory means has a first area for storing a command from the DTE and a second area for storing a data from the DTE in pairs corresponding to each mode, said control means transmits the data stored in said second area of said memory means to a line while inputting a command for storing from the DTE to the first area corresponding to said second area, and when completing the transmitting of the data stored in said second area, said control means

judges based on the command stored in said first area whether the transmitting of the data from said second area be stopped or not.

19. The data communication equipment of Claim 16 wherein said memory means has a plurality of banks, and also has data storing areas for each mode, which data storing areas store the data from the DTE in the unit of frame into said banks.

20. The data communication equipment further comprising a timer means which monitors transit time between an ended process procedure and a next process procedure, said data communication equipment starting a process of specified mode based on a mode-setting-instruction of said process procedure as well as monitoring transit time by said timer means, and executing a next specified mode when time is out in said timer means.

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